

# Montgomery County Pedestrian Safety Program



County Council Presentation  
October 21, 2010



# Pedestrian Safety Program



- Complex Program with Many Pieces to the Mosaic
  - Multiple Departments and Agencies
  - Multiple Budgets for Each Department
  - Multiple Revenue Sources
- The Pedestrian Safety Program is one component of an overall efficient and effective transportation system.

# Pedestrian Safety Program



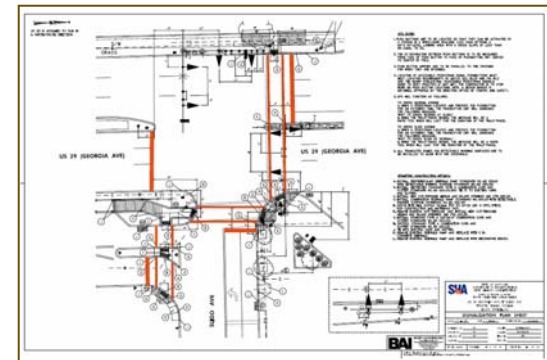
- **Objective:** Improve safety for pedestrians and make Montgomery County a more walkable community through:



Enforcement

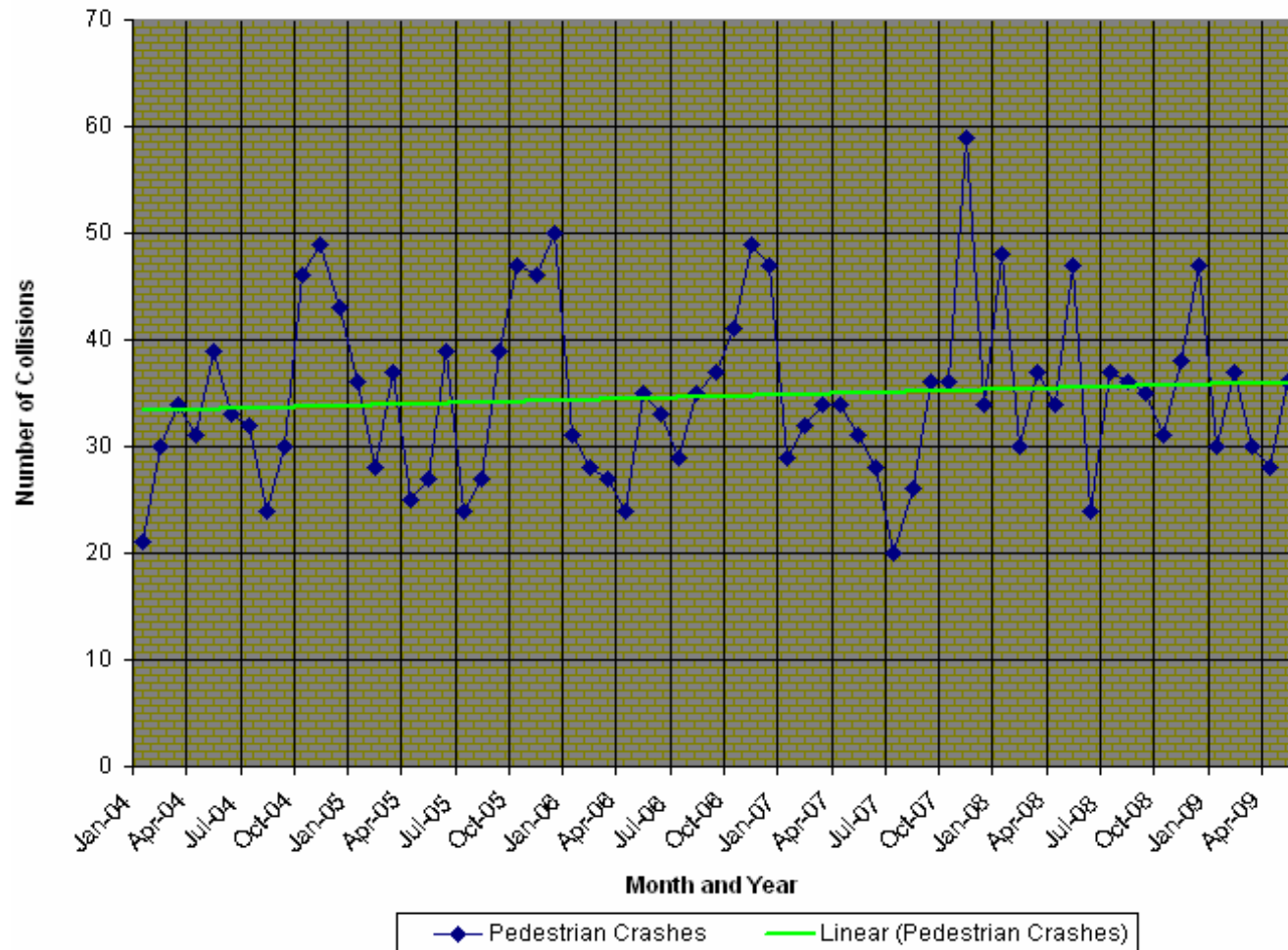


Education



Engineering

# Pedestrian Crash Trends

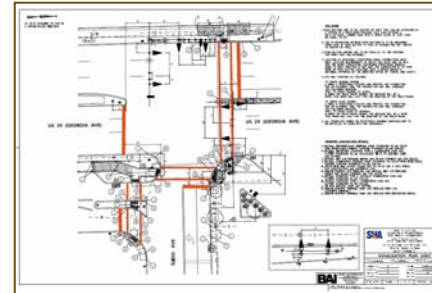


Trend indicates a gradual increase in pedestrian-related crashes.

# Pedestrian Safety Program



- Engineering
- Education
- Enforcement

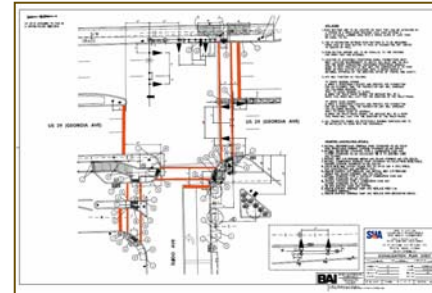




# Pedestrian Safety Program



- *Engineering*



- Education

- Enforcement



# Engineering

- Traffic Calming - **\$ 500,000**
- Safe Routes to School - **\$235,000**
- High Incidence Areas - **\$1,175,000**
- Sidewalks and Bikeways - **\$2,350,000**
- Pedestrian Signal Retiming - **\$100,000**

# Traffic Calming



- Roundabouts
- **Curb Extensions**
- Median or Pedestrian Refuge Islands
- Edgelines
- Speed Humps
- Raised Crosswalks
- Road Diet





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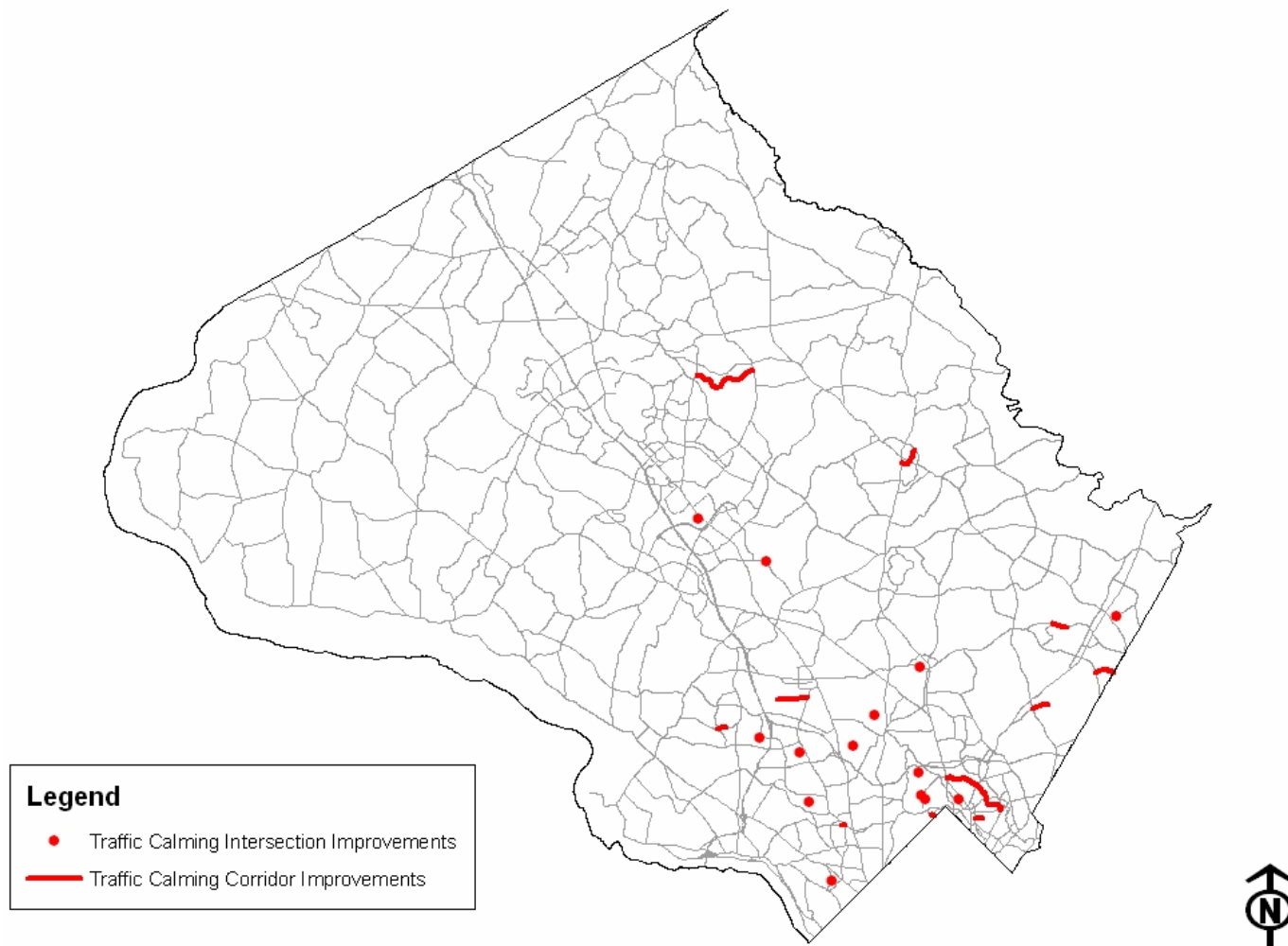
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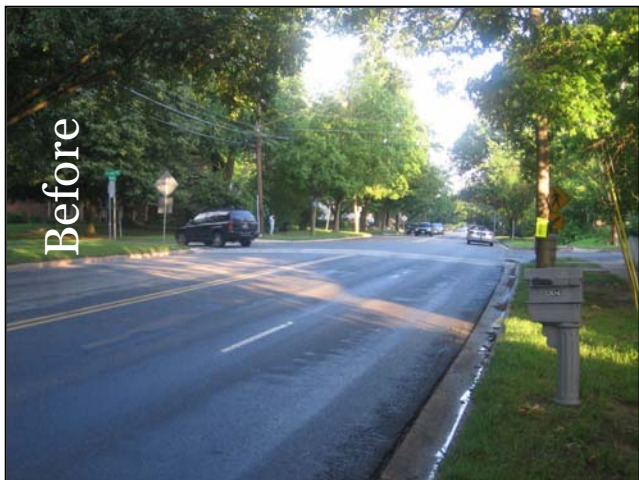
# Traffic Calming - Projects



# Traffic Calming - Projects



Arcola Drive



Spring Street



Aspen Hill Road



Dale Drive



East Village Ave





# Traffic Calming - Results



Project Name	Completion Date	Speeds (MPH)			Number of collisions		
		Posted	Avg. Before	Avg. After	3 Years Before	Time period	After through 12/09
Connecticut Ave	July-07	40	48	40	10	2 yrs. 6 Months	3
Aspen Hill Dr	May-08	30	35	34	14	1 yr. 8 Months	0
Arcola Ave	Aug-08	30	42	32	3	1 yr. 5 Months	0
Fairland Rd	July-09	40	53	42	2	6 mos.	0
Calverton Blvd	July-09	30	41	35	1	6 mos.	0
Lockwood Dr	July-09	30	40	30	0	6 mos.	0
Sligo Ave	Sept-09	30	34	31	1	4 mos.	1
Carroll Ave	Nov-09	25	33	27	2	2 mos.	0
Spartan Rd	Nov-09	30	40	33	TBD	2 mos.	0
Dale Dr*	Aug-10	30	39	34	N/A	# mos.	N/A

 Speed decline  $\geq$  5mph

•Dale Drive too recent for crash data collection

Successful in reducing average speeds. Preliminary data for Connecticut Avenue, Aspen Hill Drive, and Arcola Avenue indicate a reduction in pedestrian crashes.

# Safe Routes to School



- Comprehensive Proactive Assessments with Implemented Improvements - **Over 50 schools**
- Safety Concerns Evaluated and Addressed – **Over 100 issues**
- Demonstrated **reduction** in pedestrian collisions
- Kids Benefit Most - **all kids walk and bike**
- Focuses on school walking routes, **but entire community benefits**



# Safe Routes to School - Results



School Name	Before Treatment		After Treatment*	
	Time period	# of ped collisions	Time period	# of ped collisions
Stone Mill ES	<b>3/2006 – 3/2009</b>	<b>2</b>	<b>10 mos.</b>	<b>0</b>
Olney ES	<b>2/2006 – 2/2009</b>	<b>1</b>	<b>11 mos.</b>	<b>1</b>
Georgian Forest ES	<b>3/2006 – 3/2009</b>	<b>6</b>	<b>10 mos.</b>	<b>0</b>
Kingsview MS	<b>3/2006 – 3/2009</b>	<b>12</b>	<b>10 mos.</b>	<b>0</b>
Thurgood Marshall ES	<b>3/2006 – 3/2009</b>	<b>1</b>	<b>10 mos.</b>	<b>0</b>
Martin Luther King MS	<b>7/2006 – 7/2009</b>	<b>11</b>	<b>6 mos.</b>	<b>0</b>
Flower Hill ES	<b>6/2006 – 6/2009</b>	<b>7</b>	<b>7 mos.</b>	<b>0</b>
Greenwood ES	<b>4/2006 – 4/2009</b>	<b>2</b>	<b>9 mos.</b>	<b>0</b>
Rosa Parks MS	<b>4/2006 – 4/2009</b>	<b>2</b>	<b>9 mos.</b>	<b>1</b>
Cannon Road ES	<b>6/2006 – 6/2009</b>	<b>3</b>	<b>7 mos.</b>	<b>0</b>
Clearspring ES	<b>4/2006 – 4/2009</b>	<b>1</b>	<b>9 mos.</b>	<b>0</b>
William B. Gibbs ES	<b>9/2006 – 9/2009</b>	<b>2</b>	<b>4 mos.</b>	<b>0</b>
<b>Total</b>		<b>50</b>		<b>2</b>

Preliminary data indicates a reduction trend in pedestrian crashes within a ¼-mile area around the schools.

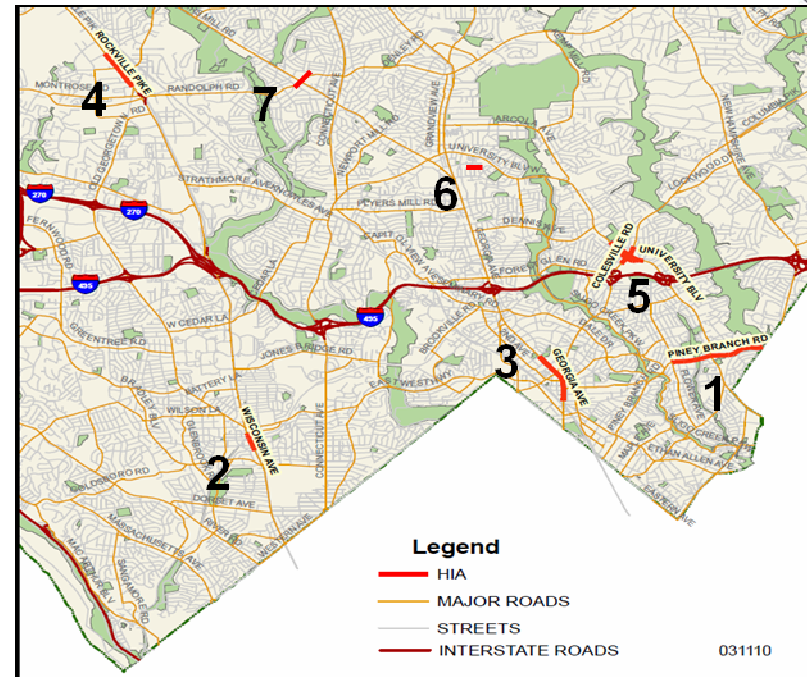
# High Incidence Areas



- Targets funding in HIA's for:
  - Engineering
  - Education
  - Enforcement
- Creates opportunities to:
  - Leverage multiple projects
  - Cost-sharing between multiple agencies

Total Annual Pedestrian Crashes for 7 HIA's

2004	2005	2006	2007	2008	2009
<b>48</b>	<b>40</b>	<b>33</b>	<b>37</b>	<b>38</b>	<b>41</b>



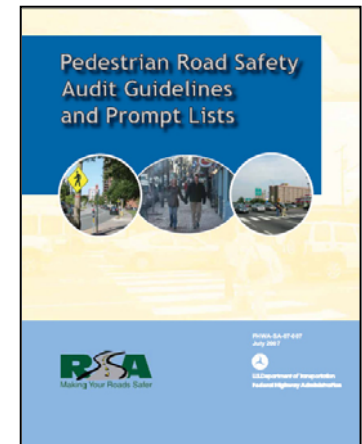
- |                      |                   |
|----------------------|-------------------|
| 1. Piney Branch Road | 4. Rockville Pike |
| 2. Wisconsin Avenue  | 5. Four Corners   |
| 3. Georgia Avenue    | 6. Reddie Drive   |
|                      | 7. Randolph Road  |

The current seven HIA's represent less than 0.5% of roadways throughout the County, but account for approximately 10% of the annual number of total pedestrian crashes.

# High Incidence Areas - Strategy



- Examine crash data yearly to identify HIA's.
- Conduct Pedestrian-Road Safety Audits based on FHWA Pedestrian Road Safety Audit Guidelines.
- Implement physical improvements in HIA's in partnership with the MDSHA and others.
- Conduct Enforcement and Education targeting the HIA's.





## High Incidence Areas - What is a Pedestrian Road Safety Audit?

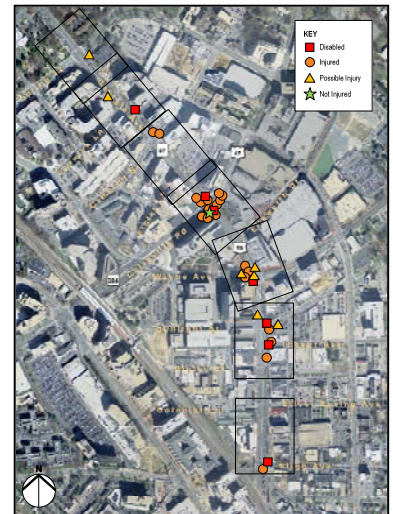
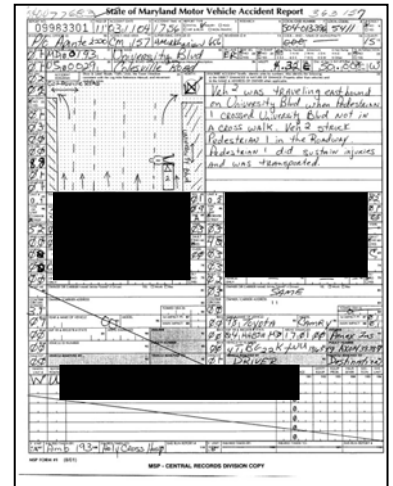


A pedestrian road safety audit is a formal safety performance examination of an existing or future road or intersection from a pedestrian perspective by an independent audit team.

# High Incidence Areas - PRSA Steps



- PRSA Steps
  - Identify Project
  - Select Team
  - Pre-Audit Meeting & Field Review
  - Audit Analysis & Findings
  - Document Results
  - Develop Improvement Projects



# High Incidence Areas - Piney Branch Road



- Background & Observations

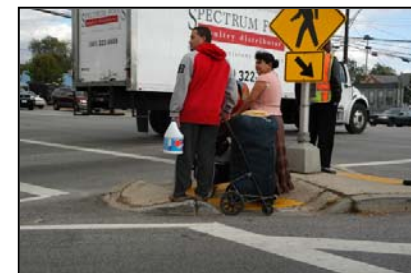
- Flower Avenue to the Prince Georges County Line
- PRSA conducted in Oct. 2008
- Over a 3-year period, 9 of 28 crashes resulted in serious/disabling injuries
- 12 of the 28 crashes occurred at intersections
- 1 fatal crash in 2004 at Piney Branch Road and Barron Street



Uncontrolled Mid-block Crossings



Lighting Conditions



Pedestrian Facility Issues



Pedestrians at fault in most crashes



Narrow Sidewalks

2004	2005	2006	2007	2008	2009	TOTAL
14	10	10	8	7	8	57



# High Incidence Areas - Wisconsin Avenue

- Background & Observations

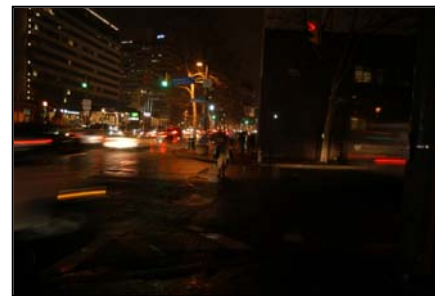
- Montgomery Ave to Leland Ave in Bethesda CBD
- PRSA conducted in Dec 2008
- Over a 4-year period, 29 crashes involved pedestrians and 1 involved a cyclist
- 17 of the 30 crashes resulted in injuries or possible injuries
- 19 of 30 crashes involved turning vehicles



Pedestrian and Vehicular Conflicts



Drivers at fault in most crashes



Lighting Conditions



Uncontrolled Mid-block Crossings



Driveway Access Conflicts



Pedestrian Facility Issues

2004	2005	2006	2007	2008	2009	TOTAL
8	6	6	10	3	4	37

*Pedestrian Safety Program*



# High Incidence Areas - Typical Improvements



- Short Term
  - Signage & Pavement Marking Improvements
  - Targeted Enforcement
  - Trim Roadside Vegetation
  - Lighting and Traffic Signal Maintenance
- Intermediate
  - Lighting Improvements
  - Pedestrian Signal Upgrades
  - Pedestrian Education Programs
- Long Term
  - Curb Extensions
  - Median Extensions & Buffer Treatments
  - Streetscape Improvements
  - Widen & Improve Sidewalks and ADA Ramps
  - Refuge Islands





# Pedestrian Facilities

- Annual Sidewalk Program - \$2,350,000
  - 12,451 linear feet
- ADA Upgrades - \$1,495,000
  - 14,605 linear feet
- Bus Stop Improvements - \$2,000,000
  - 6,995 linear feet of new sidewalks
  - 557 bus stops improved

# Pedestrian Facilities



Dimona Drive

Manchester Road

Knowles Ave

Before



After



# Pedestrian Safety Program



- Engineering

- ***Education***



- Enforcement

# Education - \$197,000



- Targeted HIA Education
- Safe Routes To School
  - Partnering with Public Schools
- MWCOG's Street Smart Campaign
- At Risk Groups
  - e.g., Young Drivers, Seniors





# Education - Piney Branch HIA



- Survey
  - 588 surveyed; 77% Spanish speakers
  - Spanish speakers had greater awareness of safe pedestrian behaviors
  - Safer behaviors practiced by those who felt less safe
- Education efforts designed from survey findings
  - Engaged bilingual community organizations
  - Focus on consequences of unsafe behaviors
  - Grassroots campaign using “Safety Promotion Teams”



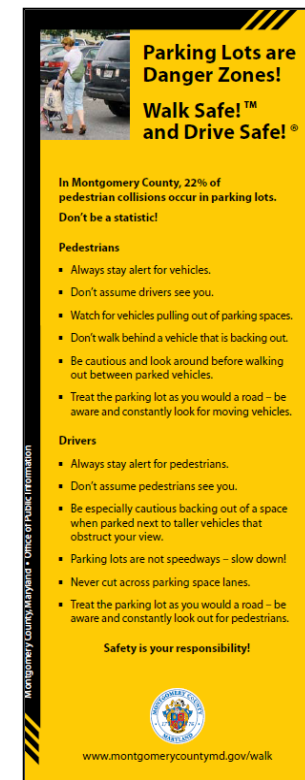




# Education

## “Parking Lots are Danger Zones!” Campaign

- Outfitted Ride On buses with exterior and interior ads
- Created movie slides shown prior to movie previews
- Distributed flyers to senior centers, grocery stores, and apartment buildings
- Held press event that gathered widespread media attention
- Conducted focus groups with seniors to learn more about their perceptions of parking lot safety



# Pedestrian Safety Program



- Engineering
- Education
- ***Enforcement***



# Enforcement



- Speed Cameras
- Red Light Cameras
- Targeted HIA Enforcement
- Pedestrian Collision Data and Analysis

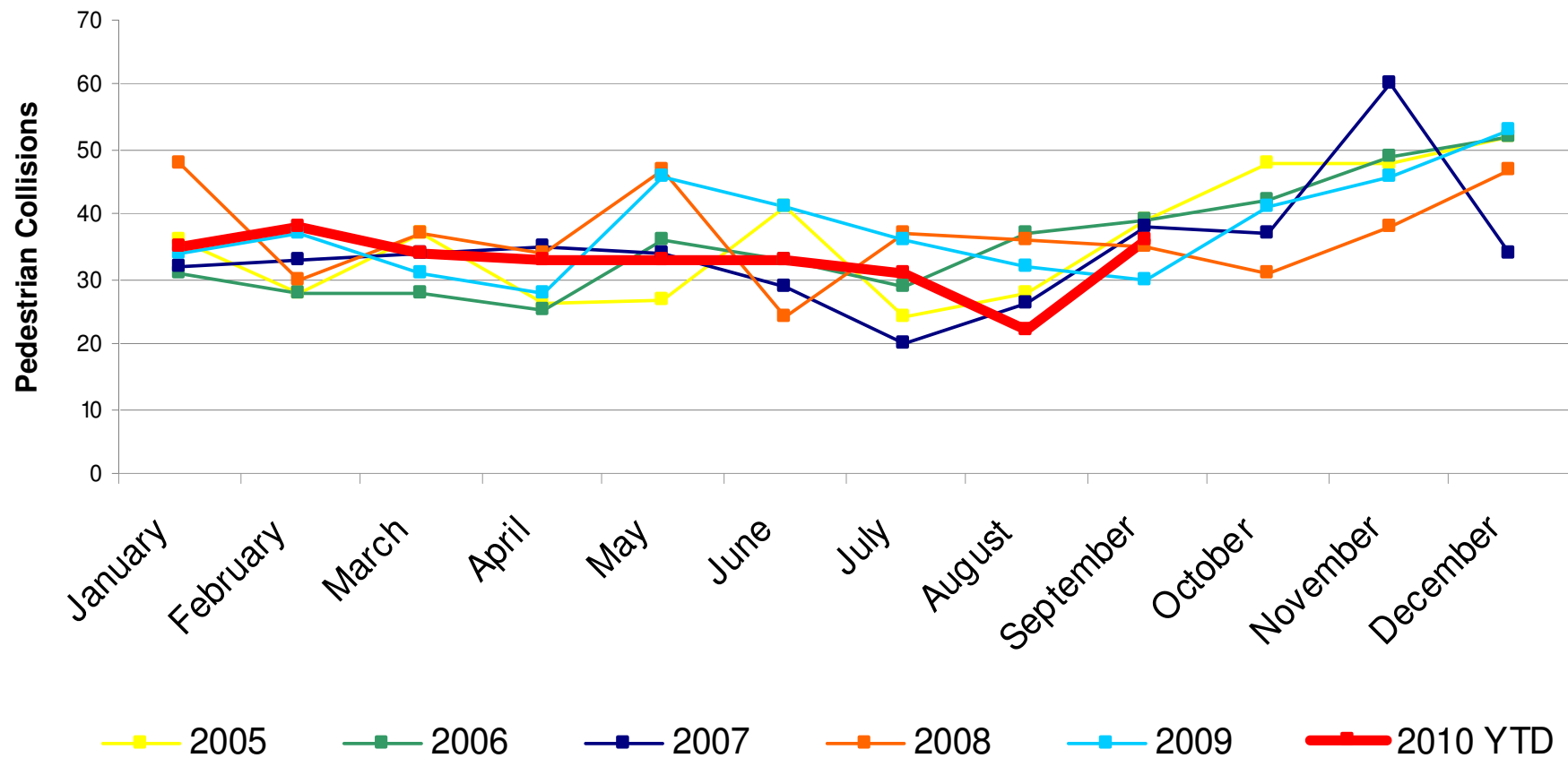
A State of Maryland Motor Vehicle Accident Report form. The form contains handwritten information including the date "09/08/2011", time "11:02:11", location "1571 W. Main St", and a description of the accident: "Veh - was traveling eastbound on University Blvd when Pedestrian crossed University Blvd not in a crosswalk. Ped 2 struck Pedestrian in the roadway. Pedestrian did sustain injuries and was transported." The form also includes a diagram of the accident scene and a table of vehicle information.



# Enforcement - Pedestrian Crash Data

	2004	2005	2006	2007	2008	2009	2010
January	21	36	31	32	48	34	35
February	30	28	28	33	30	37	38
March	36	37	28	34	37	31	34
April	32	26	25	35	34	28	33
May	39	27	36	34	47	46	33
June	33	41	33	29	24	41	33
July	33	24	29	20	37	36	31
August	24	28	37	26	36	32	22
September	31	39	39	38	35	30	36
Interim Total	<b>279</b>	<b>286</b>	<b>286</b>	<b>281</b>	<b>328</b>	<b>315</b>	<b>295</b>
October	46	48	42	37	31	41	
November	52	48	49	60	38	46	
December	43	52	52	34	47	53	
Total Collisions	<b>420</b>	<b>434</b>	<b>429</b>	<b>412</b>	<b>444</b>	<b>455</b>	
Per 100,000	45.6	46.7	45.9	43.8	46.6	46.8	
Total Fatalities	14	10	18	17	19	14	
Per 100,000	1.5	1.1	1.9	1.8	2.0	1.4	

# Enforcement - Pedestrian Collisions



MCPD Reflections: Overall, the monthly trend in collisions is consistent with the overall average trend.



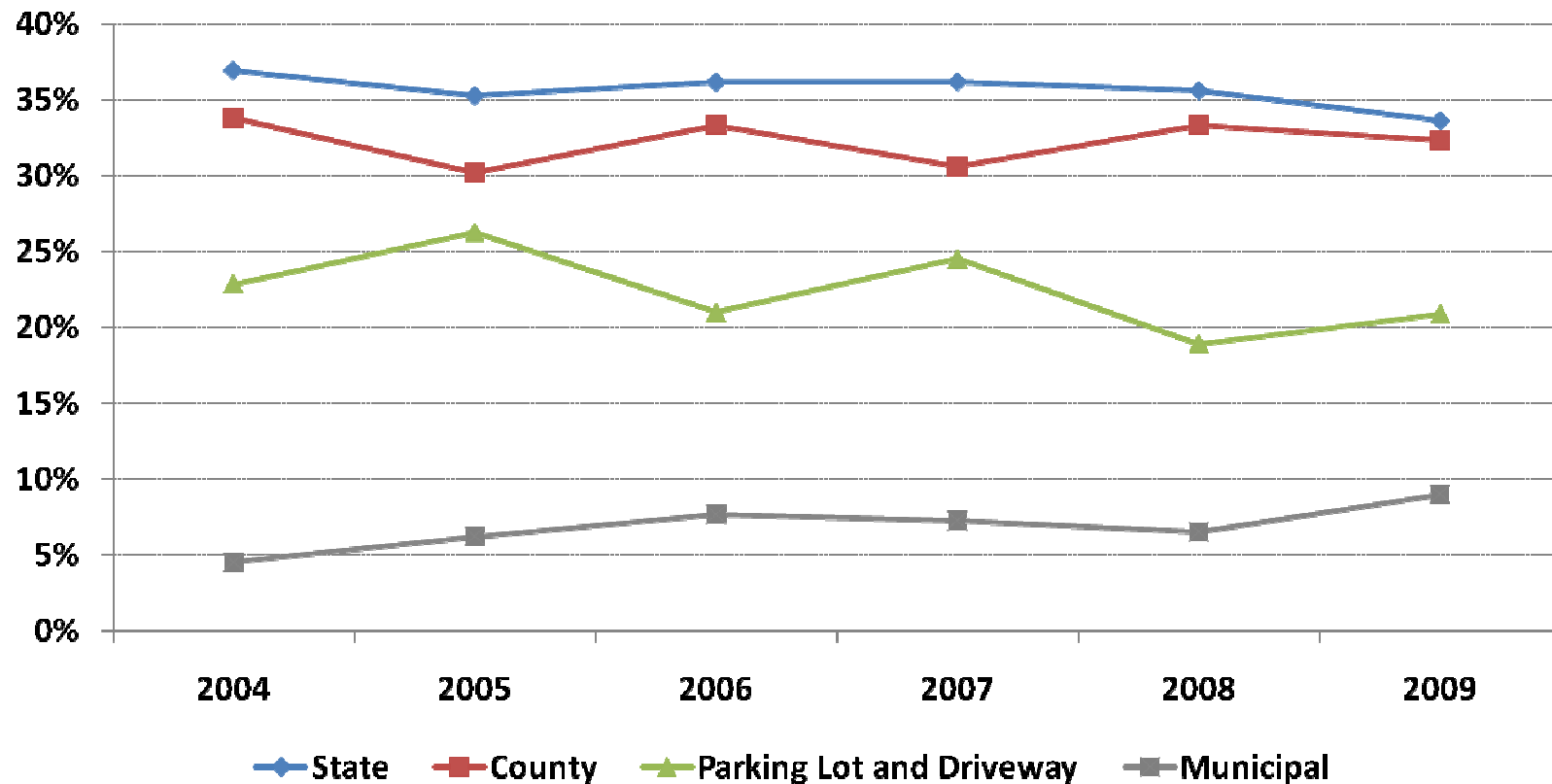
# Enforcement - Pedestrian Collisions by Controlling Jurisdiction



Controlling Jurisdiction	2004	2005	2006	2007	2008	2009
State	155	153	155	149	158	153
County	142	131	143	126	148	146
Parking Lot/ Driveway	96	114	90	101	84	95
Municipal	19	27	33	30	29	41
All other	8	9	8	6	25	19
<b>Total Number</b>	<b>420</b>	<b>434</b>	<b>429</b>	<b>412</b>	<b>444</b>	<b>454</b>



# Enforcement - Percentage of Pedestrian Collisions by Controlling Jurisdiction



MCPD Reflections: The percentage of pedestrian collisions by controlling jurisdictions is consistent over time and location type.

# Enforcement - Operations



- Approximately 5,800 contacts with driver & pedestrian violators during the enforcement operations in the high incident areas.
- An additional 5,000 contacts were made during the “Shop with a Cop” campaign in shopping center parking lots last holiday season.
- The overall observation is that driver and pedestrian behavior has not changed and that it is still too early for aggressive enforcement.
- We support the HIA’s, Safe Routes to Schools concepts and are optimistic that our School Safety and Speed Camera programs, along with the new cell phone / texting laws, will improve pedestrian safety.

# Partnerships

- Building partnerships with Federal, State & local agencies.
- Working with communities and our other partners.
  - Public Schools
  - MNCPPC
  - Pedestrian & Traffic Safety Advisory Cmte.
  - CountyStat
  - PEPCO
- Leveraging Planned Projects







# Moving Forward: Future Directions

- Continue to add to our toolbox
  - Proven & innovative techniques
  - Develop/Implement additional county-wide programs
  - Incorporate best practices & lessons learned
- Focus on programs & initiatives that improve driver & pedestrian behaviors
- Evolve from reactive efforts to proactive programs

